and Prof. Mittag-Leffler. The eloquent speech of Prof. Forsyth met with the special approval of the audience and of the Christiania Press. The addresses from the various universities and learned societies were then delivered by the delegates; these were so numerous that with a few exceptions the delegates handed them in with a simple statement of the name of the society or university from which they came.

The last stage of the proceedings consisted of the conferring of honorary degrees upon twenty-nine distinguished men of science, of whom ten were present as delegates. It was explained that the University of Christiania had hitherto not possessed the power of granting honorary degrees, but that by a special Act of the Storthing the power had been granted to the University with a view to the present occasion. Among the twenty-nine mathematicians who were created *Doctores Mathematicae*, there were six British subjects—Lord Kelvin, Lord Rayleigh, Dr. Salmon (provost of Trinity College, Dublin), Sir George Gabriel Stokes, Prof. G. H. Darwin and Prof. A. R. Forsyth. In the evening, the delegates and a large number of other guests were entertained at dinner by the Municipality of Christiania; after the dinner there was a torch-light procession of many hundreds of students, which produced a most imposing effect. The students were addressed from an open window by Dr. Nansen in an enthusiastic speech. The festival concluded with a special representation of Ibsen's *Peer Gynt* at the National Theatre on the evening of September 7, the King and a distinguished company being present. The University of Oxford was represented by Prof. A. E. H. Love, F.R.S., the University of Cambridge by Prof. A. R. Forsyth, F.R.S., the University of Dublin by Prof Joly, the University of Durham by Prof. Sampson, the University of London by Prof. A. G. Greenhill, F.R.S., the University of Glasgow by Prof. Jack, the London Mathematical Society and the Cambridge Philosophical Society by Dr. Hobson, F.R.S.

MR. F. W. RUDLER AND THE MUSEUM OF PRACTICAL GEOLOGY.

MR. F. W. RUDLER retired under the age regulations at the end of last month from the post of curator and librarian of the Museum of Practical Geology. He entered the public service in 1860 as assistant to Trenham Reeks, who was then curator of the Museum and registrar of the School of Mines. For fifteen years Mr. Rudler was actively engaged in the Museum, acquiring an intimate knowledge of mineralogy and applied geology, and an expert knowledge of British pottery. He practically re-wrote the third and fourth editions of the "Descriptive Guide to the Museum," which was originally drawn up by Robert Hunt; and he almost wholly prepared the second and third editions of the "Catalogue of Specimens of British Pottery and Porcelain."

In 1876, Mr. Rudler was chosen professor of natural science in the newly-established University College of Wales at Aberystwyth. Here he was successfully occupied for three years, until on the death of Mr. Reeks he was besought by the late Sir Andrew Ramsay to apply for the post rendered vacant in the Museum of Practical Geology. Mr. Rudler's appointment was cordially assented to, and from 1879 onwards he has held office with increasing advantage to the Institution and to the many individuals who have constantly sought his advice. It is not too much to say that one might search the world over and fail to find anyone with a fuller knowledge of the subjects that have been connected with the Library and Museum of Practical Geology, or one who was more ready at all times to give to others the benefit of varied and accurate information.

NOTES.

A COMMITTEE has been formed, under the chairmanship of Prof. Waldeyer, for the erection in Berlin of a public memorial of the late Prof. Virchow.

DR. DAVID FERRIER, F.R.S., will deliver the Harveian oration before the Royal College of Physicians, London, on October 18.

WE are sorry to have to record the death, at the age of sixty-eight, of Mr. J. W. Powell, director, since 1879, of the United States Bureau of Ethnology, and from 1880 to 1894 director of the United States Geological Survey. Mr. Powell's death occurred on September 23.

THE death, at the age of eighty-six, is reported of M. Vincent Leche Chesnevieux, the French traveller and geologist; also of Signor Adolfo Targioni-Tozzetti, emeritus professor of comparative anatomy and the zoology of the invertebrates in the Medical School at Florence. Prof. Targioni-Tozzetti was in his eightieth year.

THE *Pioneer* (Allahabad) learns from its correspondent at Kashgar that a severe earthquake occurred at that place at 8 a.m. on August 22, resulting in the loss of 1000 lives and great damage to property. A pronounced rise in the temperature immediately followed the shock. This rise continued for a week, during which period there were repeated slight shocks A Reuter telegram from Simla, dated September 26, gives the number of people killed as 667, and states that more than 1000 persons were injured.

REUTER'S agent at Mobile, telegraphing on September 30, states that information has been received by steamer that an earthquake of a serious character occurred in Guatemala and British Honduras on September 23. The shocks occurred simultaneously along the coast and lasted three minutes. It is believed that Guatemala City was the centre of the disturbances. The telegraph wires are down between Guatemala City and the coast.

A REUTER telegram from New York, dated September 24, states that the *New York Herald* has published the following telegram from Lima:—"Mount Chullapata, which is situated 18 miles from Celendin, has been throwing up dust and smoke for a fortnight. Loud noises have been audible at a distance of 30 miles from the mountain. There is no record that Mount Chullapata was ever believed to be a volcano."

A SEVERE cyclone visited the eastern Sicilian coast on Friday last from Taormina to Catania, and resulted in a heavy loss of life and very great damage to property. At Modica, two mountain torrents burst their banks and submerged the lower portion of the town as high as the second floor of the houses. The disaster was at first attributed to a waterspout, but subsequent accounts declared that it was due to torrential rains following on the prolonged drought. Throughout the day, Mount Etna sent up a thick column of steam from the vicinity of the scene of the eruption of 1892.

A SEVERE typhoon occurred at Yokohama on September 29, and a great wave broke over the adjacent district of Odawara, causing, it is feared, the loss of 200 lives; much shipping was also damaged.

AN Institute of Colonial Medicine has, says the *British Medical Journal*, recently been established in Paris. The scheme of instruction comprises courses on bacteriological and hæmatological technique, parasitology, tropical surgery, tropical ophthalmology, tropical pathology and hygiene, and tropical skin diseases. The Institute is open to foreign as well as to French medical practitioners.

THE official programme of the fourteenth International Medical Congress, to be held at Madrid from April 23 to April 30 next, has now been issued. The congress will be divided into the following sections:—Anatomy (including anthropology, comparative anatomy, embryology, descriptive anatomy, normal histology and teratology), physiology, general pathology, therapeutics, pathology, nervous diseases, children's diseases, dermatology and syphilis, general surgery, ophthalmology, oto-rhino-laryngology, obstetrics and gynæcology, military-naval medicine and hygiene, hygiene and epidemiology, and forensic medicine and toxicology.

AT the annual meeting of the Indian Association for the Cultivation of Science, held in Calcutta last month, it was decided to found a medal, to be known as the Temple medal, to perpetuate the memory of the late Sir Richard Temple for the invaluable services he rendered in the establishment of the Association.

A COURSE of four lectures is to be given at Gresham College, Basinghall Street, by Dr. E. Symes Thompson on "Food." The lectures will be delivered on October 7, 8, 9 and 10 at 6 o'clock; no charge is made for admission.

IN connection with the Universal Exposition which is to take place at St. Louis, Mo., U.S.A., in 1904, there is to be an aëronautical competition and exhibition, the rules and regulations governing which have just reached us. From them we learn that the sum of one hundred thousand dollars is offered as a grand prize, and that fifty thousand dollars are to be appropriated for minor and subsidiary prizes for competition between airships, balloons, air-ship motors, kites, &c. Information concerning the competitions is obtainable from the Chief of the Department of Transportation Exhibits, Louisiana Purchase Exposition, St. Louis, Mo., U.S.A.

ACCORDING to the *American Electrician*, a commission was recently appointed by the New York State Legislature for the purpose of determining the advisability of establishing a State electrical laboratory to provide independent authoritative information on questions of electrical science and official standardisation of electrical measuring instruments, apparatus and standards. The commission is to report to the Legislature at the opening of its session in 1903, and if in its judgment the establishment of a laboratory is necessary, detailed plans and specifications for the construction and equipment of such a laboratory are to be prepared and submitted in connection with the commission's report.

ACCORDING to the Berlin correspondent of the *Times*, the German Government is afraid that the policy pursued by the Marconi Company, and the arrangements concluded between it and Lloyds, threaten an absolute monopoly which would be objectionable for both commercial and political reasons. Germany has therefore invited England, France, Russia, Italy, Austria-Hungary and the United States to make arrangements for a meeting of delegates to prepare a programme for an international conference to consider the subject. It is said that this suggestion has been favourably received by the States addressed, and that, as soon as a programme has been arranged, the co-operation of all maritime States will be sought in drawing up an international convention to settle the conditions under which the establishment of stations for wireless telegraphy shall be allowed. The *Electrician* suggests that the conference should take place at the International Telegraphic Conference to be held in London next year. It is to be hoped that the conference will be held soon and will be successful. We have already pointed out in these columns the growing necessity for some consolidation of the competing systems.

A NOVEL table, designed by Prof. E. C. Pickering, has been placed in the north building of the Harvard College Observatory. It is in two revolving sections, and takes the place of six separate tables which have hitherto been in use. In the upper section of the table, the annals of the observatory, magnifying glasses and reference books are kept, and the lower section is used for the storing of letters and files.

ACCORDING to the *Aëronautical World*, a new American periodical, Prof. Graham Bell has nearly completed his flying machine. It is being constructed under Prof. Bell's personal supervision, and is stated to be radically different from M. Santos-Dumont's machine. The machine will, it is reported, be 20 feet in length and composed of twenty-five distinct parts, and the principle of the kite will be utilised to a considerable extent.

THE *Athenaeum* learns that steps are being taken by the Department of Prisons, New South Wales, to establish a new system of criminal identification on the lines of the combined Bertillon and Francis Galton methods, modified to suit local conditions. A comprehensive criminal register is now in course of compilation, and already the anthropometrical measurements of a large number of prisoners have been taken, together with finger impressions and other distinguishing records. The work has been entrusted to Mr. M'Cauley, Deputy Controller and Inspector of Prisons, who has recently personally investigated the systems of identification pursued in the prisons of France and of the United Kingdom.

WRITING from Yokohama on August 24, Captain H. J. Snow says:—"I have never known such a cool summer since 1869. Constant rain has been the rule in this part of the country, and I think it has been similar all over Japan. Floods everywhere. The neighbourhood of the Philippines has sent us along a string of storms of small area, not one of which has come along the Pacific side of Japan. They have all either gone through the Korean Straits or across the south-western part of Japan and the Japan Sea. They have followed each other so often that the whole weather of the country has been kept in an unsettled state. Winds from north to east have prevailed nearly all the summer so far. We certainly have not had six days of southerly winds all told. The thermometer has ranged between 62° and 75° F. nearly all the time. On four or five days only it reached 84° to 86°."

THE eruption of Mont Pelée appears to have been heard as far away as Maracaibo, Venezuela, a distance of about 830 miles. In a report abstracted in the last number of the *Monthly Weather Review*, Mr. E. H. Plumacher, United States Consul at Maracaibo, writes:—"On the morning of the great calamity that has fallen upon the island of Martinique, strong rumbling sounds were heard here, as well as in the other parts of this State. At many places during the day before the catastrophe, noises of heavy cannonading were heard at La Ceiba, Cabimas, Perija and Quisiro. At Sinamaica the people thought that a great battle with heavy artillery was in progress near Maracaibo. . . . Early in the morning of the catastrophe, I found that my servant had saddled my horse; when I asked him if somebody was sick and needed a doctor, he answered that he thought I needed my horse to go to the city, as a big battle must be going on, judging from the sounds of the heavy firing of guns. Observing the same sounds, I knew at once that it could not be heavy artillery, for if all of the cannons of Venezuela were fired together, they could not produce such sounds. It was not like cannonading with heavy siege guns; it was neither thunder nor the strange, unpleasant subterranean sounds of convulsions of the earth; it was as if immense explosives were fired high up in the clouds. . . . Last night

(May 12) after eleven o'clock we had a slight horizontal trembling movement from a south-westerly direction."

AN aërial luggage transmitter has been erected recently by the L. and S.W. Railway Company at their junction at Woking, and is, we understand, in the nature of an experiment, being, it is believed, the first appliance of its kind used by any railway company in the kingdom. In briefly describing it, *Engineering* states that on the up and down platforms are erected iron towers, each 32 feet 6 inches in height, and set in blocks of concrete. Suspended from tower to tower are four spans of wire cable. The topmost cable, on which the transmitter runs to and fro, is exceptionally strong, and is capable of bearing a strain equal to at least 20 tons. The second cable keeps the transmitter in position, and the third and fourth cables, which are much thinner and are in one length, are for "paying out" and "returning." Each span is 110 feet long, and the height of the transmitter above the railway is 22 feet 6 inches. Attached to the transmitter is an iron cage capable of holding half a ton at one time. The whole is worked by hydraulic power, the engine being on the down side. Above it is a small box in which are the levers working the apparatus. The transmitter is very rapid in its working, taking only 30 seconds to deposit 10 cwt. of luggage from one platform to the other. All the experimental trials have been, it is said, most satisfactory, and the transmitter is now ready for use.

ATTENTION has recently been called to the possibilities of the balata fields on the Amazon. A gutta-percha merchant in the Guianas, examining this region about a year ago, found the balata tree growing in abundance near Para, and on the Amazon and its tributaries for thousands of miles. The Brazilians had no knowledge of its gum-producing qualities, and were found cutting down the trees for firewood and building material. A concession was bought, and the practical work of producing gutta-percha for the market begun. As in the case of rubber, there is practically no limit to the supply of gutta-percha on the Amazon, and, as it can be produced at a fraction of the cost of rubber, it offers a much higher percentage of profit. The method of bleeding the balata tree is entirely different from that used to extract the gum of the rubber tree, and only experienced and expert bleeders can be employed. But, on the other hand, these trees yield many times as much sap as the rubber trees, and one man can, it is said, easily produce as many kilograms of gutta-percha in a day as twenty men can extract of rubber. Each tree will average 3½ lb. of gutta-percha and a competent bleeder can prepare 40 to 50 lb. per day. The gum is first fermented and then dried in the sun, after which it is ready for shipment.

WE have received several communications on the variation of the small copper butterfly (*Chrysophanus Phlaeas*, Linn.) with reference to the letter of a correspondent in our issue of September 11. The insect is very variable, and the row of blue spots inside the dark border of the hind wing, which has been specially referred to, is not uncommon, and according to Rühl ("Palæarktischen Grossschmetterlinge," i. p. 217) is only met with in the female. The insect extends throughout the whole northern hemisphere, and exhibits local variation in many parts of its range. In the south of Europe and Asia, a larger and darker variety, with rudimentary tails (var. *Eleus*, Fabricius), is not uncommon. The species is also very prone to albinism, specimens with the usual copper colour of the wings replaced by white, leaving only the black markings dark, being occasionally met with (var. *Schmidtii*, Gerhard). We are not aware that it ever hybridises with "blues," as one of our correspondents has suggested. We may refer readers who require further information to the following works:—Barrett's "Lepidoptera of the British Islands," vol. i. pp. 62-65, plate 2, Figs. 2, 2*a* to 2*j* (Fig. 2*a* represents the white form); Tutt's "British Butterflies," pp. 152-155; Mosley's "Illustrations of Varieties of British Lepidoptera," part 10 ("Polyommatus Phlæas"), plates 1 and 2 (twelve varieties figured, some very remarkable, including not only coppery and black and white forms, but a dark greyish brown specimen, slightly suffused with copper and marked with a few large black spots); Rühl's "Palæarktischen Grossschmetterlinge," Band 1, pp. 217, 218, 746, 747 (this work gives full information respecting the foreign range and variation of the insect); Staudinger and Rebel, "Catalog der Lepidopteren des Palæarctischen Faunengebietes," p. 74. Mr. F. Merrifield has also called our attention to his paper on "The Coloration of *Chrysophanus Phlaeas* as affected by Temperature," in the *Entomologist* for November, 1893 (vol. xxvi. pp. 333-337).

THE report on "British Rainfall for the Year 1901," compiled by Mr. H. S. Wallis and Dr. H. R. Mill (60 + 252 pp. large 8vo), contains, as usual, most valuable and trustworthy data, showing the annual distribution of rain over the British Isles, as observed at about 3500 stations, together with the number of days on which 0·01 inch or more fell. This most useful organisation is so well known that it seems scarcely necessary to refer to the articles which regularly appear upon various branches of rainfall work. The notes on the meteorology of the year and on the principal phenomena, arranged according to months, are exceedingly interesting and valuable for reference, as are also the tables showing the heavy falls in short periods and the monthly rainfall at 232 stations. The comparison of the rainfall of the year with a thirty years' average is very instructive, and shows at a glance that, on the whole, there has been a great deficiency in the total amount. In the eastern counties the deficiency reached 30 or 35 per cent. of the normal value.

IN the *Transactions* of the South African Philosophical Society of June last, Mr. J. R. Sutton contributes an elaborate paper on the "Pressure and Temperature Results for the Great Plateau of South Africa," accompanied by useful daily and monthly means for the years 1888-97. The discussion exhibits a systematic comparison between the temperatures and pressures of the air over a plateau and corresponding coast station, as represented by observations at Kimberley and Durban, similarly to comparisons between the summit and base of a mountain.

THE United States Weather Bureau has published a valuable memoir on West Indian hurricanes (*Bulletin* No. 32), prepared by Mr. W. H. Alexander from all available sources. Part of the information has been published in a previous *Bulletin*, but the present paper includes additional observations on those of St. Kitts and Porto Rico in particular, with brief historical notes of the most remarkable storms that have occurred from the earliest times.

THE *Journal* of the College of Science of Tokio (vol. xvi. article 7) contains an interesting paper entitled "Studies in Atmospheric Electricity," by Prof. Y. Homma. The facts discussed have been obtained chiefly from observations and documents belonging to the Central Meteorological Observatory of Japan. The principal conclusions are:—(1) The negative potential observed during strong wind is entirely due to the negative electrification of the dust in the atmosphere by friction with terrestial objects; (2) similarly the high potential observed during fog or haze is due to the positive electrification of the water particles composing it; (3) when a mass of cold air comes in contact with a mass of warm air, the former becomes positively electrified with respect to the latter; (4) the high potentials about sunrise are probably owing to the air near the surface having a lower temperature than the air above it, and becoming, in consequence, positively electrified; (5) when two masses of air at different temperatures happen to be mixed suddenly, the electric field is violently disturbed. Various types of potential are illustrated by reproductions of photographic curves of a self-recording electrometer.

IT is often necessary in experimental work to maintain a condenser continuously charged at a constant high potential for a considerable length of time, and various methods, none of them altogether satisfactory, have been proposed. An "electrostatic relay" suitable for this purpose is described by M. V. Crémieu in the *Journal de Physique* for September. The form hitherto found most satisfactory depends essentially on the action of an electrostatic balance, which automatically makes or breaks contact in an electric circuit when the potential passes a certain value, thereby connecting or disconnecting the condenser to be charged and an electrostatic machine. The objection to this arrangement arises from the fact that a certain force is necessary either to make or break the contact, and hence the potential of the condenser may fluctuate as much as 22 per cent. The arrangement which M. Crémieu now proposes obviates this difficulty. In one of the contacts there is no adhesion of the terminals and no sparking, because when the contact is made only a very small quantity of electricity flows through it, and when it is broken the terminals are both at the same potential. In the only contact in which adhesion may occur, the terminals are separated by a force which can by adjustment of the apparatus be made as large as desired. It results that the present arrangement is capable of regulating the potential of a condenser of 1 kilometre capacity, charged up to 5000 volts, to within ½ per cent.

MR. J. L. WORTMAN contributes part i. of "Studies of Eocene Mammalia in the Marsh Collection, Peabody Museum" (*Amer. Journ. Science*, ser. 4, vols. xi.-xiv., 1901-1902). In this work the Carnivora are dealt with, the ancestral relations and progressive modifications of the several families are considered, some new genera and species are described, others are freshly defined, and some, like Triacodon, Ziphacodon and Harpalodon, are not regarded as valid genera. The author also discusses the general organisation of the Carnivora and the relationship of its more primitive members to the metatherian marsupials.

IN an exhaustive memoir relative to the Mexican meteorites which was published in the *Mineralogical Magazine* in 1890 (vol. ix. pp. 91-178), Mr. Fletcher called attention to the fact that a large mass of meteoric iron, found in 1867 in an ancient grave at Casas Grandes de Malintzin, Chihuahua, Mexico, and thus of much archæological interest, had not been heard of since 1873, in which year it was said to be about to be transported from Casas Grandes to the United States consulate at El Paso. Mr. Fletcher suggested that the missing mass was possibly identical with one which had been shown in the Mexican mineral exhibit at the United States International Exhibition of 1876 and had been afterwards transferred to the Smithsonian Institution. On investigation, the Washington authorities were convinced that the suggestion was well founded. Mr. Wirt Tassin has now published (*Proceedings* of the United States National Museum, 1902, vol. xxv. p. 69) a description of the mineralogical and chemical characters of the mass. Very sharply defined Widmanstätten figures are developed by the etching of a polished face. The percentage of nickel (and cobalt) varies in different parts from 4·5 to 5·3. The chemical composition of one of the alloys (tænite) corresponds to the formula Fe_6Ni. As is usual in meteoric irons, both troilite (ferrous sulphide) and schreibersite (phosphide of iron and nickel) are present; both minerals were isolated and analysed. Cliftonite, the cubic form of graphitic carbon, was carefully sought for, but only massive graphitic carbon was found.

IN the course of an interesting paper on the crustacean fauna of the Mammoth Cave, Kentucky, and its neighbourhood, forming No. 1285 of the *Proceedings* of the U.S. Museum, Mr. W. P. Hay describes a new form of blind shrimp discovered by himself in one of the streams passing through the cave. This shrimp, which belongs to a family previously unknown from the North American Continent, is referred to a new genus, although it appears to come very close to Xiphocaris, of which one representative is found in the West Indies, a second in New Zealand and a third in the Indo-Malay region. The author is of opinion that the group is a very ancient one and that the cave-forms have survived in districts whence their relatives have migrated south.

THE Report of the Director of the Botanical Survey for the year 1901-1902 has been received, and includes the independent reports of the directors of the three botanical departments. The chief items of interest are the failure of attempts to introduce the plant *Paspalum dilatatum*, which has a considerable reputation in America and Australia as a drought-resisting fodder grass, hybridisation experiments with wheat, and various sugar-cane pests and diseases.

WE have received a subject list of works on domestic economy, foods and beverages, including the culture of cacao, coffee, barley, hops, sugar, tea and the grape, in the library of the Patent Office. The list comprises 1270 works.

THE September issue of the *Agricultural Journal* of the Cape of Good Hope contains a powerful plea for the use of the metric system in South Africa from the pen of Mr. D. E. Hutchins, conservator of forests, western districts of Cape Colony. The number also contains the communications on the "Misuse of Coal" by Prof. John Perry, F.R.S., and Mr. Hutchins which appeared in our columns on March 20 and July 10 respectively.

THE same number of the journal has a note upon some French experiments which have been made respecting the use of salt in the dietary of sheep. Three lots of sheep were fed identically, excepting that one lot had no salt, another lot had half an ounce every day and the remainder three-quarters of an ounce daily. Those receiving half an ounce gained 4·5 pounds each more than those which had no salt and 1·25 pounds more than those which had more than half an ounce. The salted sheep had 1·75 pounds more wool and a better fleece than those which had no salt.

THE current issue of *Engineering* contains a description of the proposed scheme for the transmission of letters, newspapers and parcels by an aërial electric railway which is at present under the consideration of the Italian Minister of Posts and Telegraphs, to which we briefly referred in our columns of September 18.

THE *Times* of Thursday last contains an interesting account, by Mr. J. Y. Buchanan, F.R.S., of the recently completed fourth annual scientific cruise of the Prince of Monaco's steam yacht *Princesse Alice*.

A NEW edition, the sixth, of Lord Avebury's "The Origin of Civilisation and the Primitive Condition of Man" has just been issued by Messrs. Longmans and Co. The author, in his preface, states that he sees no reason to change in any essential respects the opinions originally expressed by him in the first edition of the book thirty years ago. The present issue of the work contains, however, numerous additions here and there.

THE Report of the proceedings and abstracts of the papers read at the International Engineering Congress held in Glasgow in 1901 has been issued in volume form by Mr. W. Asher, of Glasgow.

Messrs. Philip Harris and Co., Ltd., Birmingham, have sent us a handy little pocket diary giving, besides space for notes, addresses, &c., particulars and dates of the various science examinations which are to take place during the session 1902–3.

Three catalogues which should be of interest to our readers have reached us, viz., a "Subject List of Works on the Textile Industries and Wearing Apparel, including the Culture and Chemical Technology of Textile Fibres, in the Library of the Patent Office" (issued by the Patent Office); "Catalogue of Geological Books and Papers," on sale by Dulau and Co.; and a "Catalogue of Miscellaneous Books in Literature, Science and Art," offered by Sotheran and Co.

The additions to the Zoological Society's Gardens during the past week include a White-throated Capuchin (*Cebus hypoleucus*) from Central America, presented by Dr. O. Inchley; an African Civet Cat (*Viverra civetta*) from Sierra Leone, presented by Mr. Reginald Espeut; a Ring-tailed Coati (*Nasua rufa*) from South America, presented by Mr. Alfred Stockman; a Sparrow Hawk (*Accipiter nisus*), British, presented by Mr. M. T. England; a Nilotic Crocodile (*Crocodilus niloticus*) from Africa, presented by Mr. L. C. Ditton; a Common Boa (*Boa constrictor*) from Trinidad, presented by Mr. W. J. Sanger Tucker; a Macaque Monkey (*Macacus cynomolgus*) from India, a Vervet Monkey (*Cercopithecus lalandii*) from South Africa, four Lesser Egyptian Gerbilles (*Gerbillus aegyptius*) from North Africa, a Great Anteater (*Myrmecophaga jubata*) from South America, a Spix's Macaw (*Cyanopsittacus spixi*), ten Cope's Terrapins (*Hydromedusa tectifera*) from Brazil, a Limbless Lizard (*Pygopus lepidopus*) from Australia, deposited.

OUR ASTRONOMICAL COLUMN.

Ephemeris for the Search of the Comet Tempel$_3$-Swift.—M. F. Bossert contributes to No. 3811 of the *Astronomische Nachrichten* an ephemeris for the search for this comet. An extract is given herewith :—

12*h*. *Paris M. T.*

1902.	α h.	m.	s.	δ °	′	log *r*.	log Δ.
Oct. 1	19	3	28	−19	12·2	0·2518	0·1335
,, 6		8	1	18	58·1	0·2421	0·1385
,, 11		13	30	18	42·3	0·2321	0·1432
,, 16		19	51	18	23·8	0·2220	0·1471
,, 21		27	4	18	3·0	0·2117	0·1507
,, 26		35	8	17	38·8	0·2013	0·1535
,, 31		43	54	17	12·0	0·1909	0·1563
Nov. 5	19	53	28	−16	41·3	0·1803	0·1582

Grigg's Comet.—The comet which was announced by Mr. John Grigg has been named 1902 *c*, and the following ephemeris has been calculated for it by Herr M. Ebell, taking T=June 20·0 Berlin M.T., from the elements previously published :—

1902.	α. h.	m.	δ °	′	log *r*.	log Δ.	Brightness.
May 20	4	13·7	+16	15	9·9407	0·2706	0·38
June 21	7	28·1	+16	27	9·7245	0·0937	2·29
July 23	11	28·5	+ 7	1	9·9567	0·0416	1·00
Aug. 24	14	21·2	− 2	54	0·1565	0·1896	0·20
Sept. 25	15	57·5	− 8	22	0·2855	0·3536	0·05
Oct. 27	17	4·0	−10	39	0·3785	0·4773	0·02

Unit of brightness on July 23. (*Astronomische Nachrichten*, 3816.)

Reappearance of Eros.—This planet was visually rediscovered by Dr. Charles J. Ling, using the 20-inch refractor of the Chamberlain Observatory, at 3.15 a.m. on August 2. On August 7, Dr. Ling made an accurate determination of the planet's position and magnitude, and this showed the right ascension to be 15 seconds less than the computed R.A. obtained from Miss M. C. Traylor's ephemeris; the declination only shows a variation of less than 1 minute from the position given by the ephemeris. Dr. Ling estimated the magnitude to be 1m.·0 brighter than one would expect from the observations published in No. 61 of the Harvard College *Circular*, and he has confirmed his estimate on several later occasions. As these estimations were made when the planet was low down in the east and just before dawn, it is not likely that he has overestimated the brightness; photometric measures should therefore be made as soon as possible by those observatories which are equipped for this work.

Eros is now moving eastward nearly as fast as the sun, and will move southwards for several months, so that it will not be very favourably situated for observers in the northern hemisphere. Its position on August 11 at 15h. 25m. 19s. (University Park M.T.) was :—

R.A. 5h. 36m. 35s.·03
Dec. + 31° 56′ 17″·7
(*Popular Astronomy*, No. 97.)

A Remarkable Meteor.—A meteor of extraordinary brightness was observed at Earlsfield, Surrey, on the evening of September 29.

Two observers, Mr. Archibald McDougall, of Earlsfield, and Mr. W. E. Rolston, of the Solar Physics Observatory, were, at the moment of the meteor's appearance, looking at that part of the sky in which it was first visible, and both were very much surprised by the brightness and beauty of the appearance. They recorded the following data regarding the phenomenon :—

At 10.16 p.m. the meteor appeared as a faint greenish trailing light, having a phosphorescent appearance, in the S.S.W., and very deliberately travelled in a south-eastern direction. Its altitude at the commencement of its flight was about 25° to 30°, and its bursting point was 10° to 15° above the horizon. The head gradually swelled out into an elongated pear-shaped mass, and the light emitted by it on bursting was of a yellowish red tinge, which afterwards became rose-coloured. The whole phenomenon occupied about 4 to 5 seconds, but the faint greenish trail disappeared, closing up from its starting point, in about 1½ seconds; this trail was about 10° long. The meteor was appreciably brighter than Jupiter; it first appeared about halfway between α and γ Aquarii and then travelled in the direction of Cetus.

Several other bright meteors were seen by Mr. Rolston on the same evening.

Meteor Radiants.—In a list of radiants observed at the Observatory of Athens during 1900 and 1901, M. Eginitis records in the *Astronomische Nachrichten* (No. 3815) two new radiants, and three which he says are "probably new."

During 1900 and 1901, the maximum of the Perseid shower was recorded as occurring on August 11, the principal radiant being situated near to η Persei, whilst the principal point from which the Leonids seemed to radiate was recorded as being situated near to Regulus. M. Eginitis remarks on the number of different radiants from which each shower appears to proceed.

Instructions on the Observation of the Sun.—Under this heading, "La Commission Solaire" publish, in the September *Bulletin de la Société Astronomique de France*, an introduction to the "Instructions for Solar Observations," of which they propose to send a copy to all members of the Société Astronomique who intend taking part in the solar observations the preparation and collection of which form the *raison d'être* of the commission recently appointed.

The introduction first points out the vital importance of an earnest and continuous study of solar physics, and then proceeds to state under twenty-one subheadings the details of these studies, the necessity for each, and the necessity for the continuous gathering together and the reduction of the whole work. M. Deslandres, who is the writer of the introduction, especially insists upon the absolute necessity of the co-operation of many observers in this work.

Corrections to the Right Ascensions of the Principal Stars of the Berliner Jahrbuch.—Nos. 3813 and 3814 of the *Astronomische Nachrichten* are devoted to an account, by Senor Campos Rodrigues, of the methods pursued, and the results obtained thereby, in determining the corrections obtained at Lisbon to the right ascensions of 384 of the principal stars given in the Berliner Jahrbuch.

Senor Rodrigues describes the meridian circle and the instrumental aids which he has used in this work, and then sets out in tabular form the results he has obtained since he commenced the work in 1887.